

PATENT COOPERATION TREATY

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REC'D 21 JUN 2005

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

PCT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 55699 PCT sb/sib		FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE2004/000424	International filing date (day/month/year) 22.03.2004	Priority date (day/month/year) 28.03.2003	
International Patent Classification (IPC) or national classification and IPC A01J5/08 // A01J5/04			
Applicant DeLaval Holding AB et al			

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 3 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 4 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

- This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 11.08.2004	Date of completion of this report 15.06.2005
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88 Form PCT/IPEA/409 (cover sheet) (January 2004)	Authorized officer Magnus Thorén/EK Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2004/000424

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1 - 10 _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* 11 - 14 _____ received by this Authority on 21.02.2005

pages* _____ received by this Authority on _____

☒ the drawings:

pages 1 - 3 _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2004/000424

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-23</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-23</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-23</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Documents cited in the International Search Report:

D1: US2429983 A

D2: US2497299 A

D3: DE1027457 B

D4: US6058880 A

The present invention relates to a set of four teat cup liners and a milking member including such a set. The set is characterised in that a conduit portion of a first pair of liners differs from the property of a second pair. The property could inter alia be the length of the short milk tube, in order to compensate for the asymmetrical position of the teats on the udder.

As described in D1 - D4 this asymmetry is well known, but the solution to the problem in these documents is not to provide two pairs of teat cup liners. These documents solve the problem by designing the claw asymmetrically, thereby avoiding the inconvenience of having to manufacture, store and distribute liners with different length.

The present invention goes contrary to the established technology, and is therefore considered to involve an inventive step. The invention is novel and industrially applicable.

Claims

1. A set of a four of teatcup liners (4, 5) for a milking member including a claw (1) and four teatcups (2) to be
5 attached to a respective teat of an animal to be milked, each teatcup liner (4, 5) having a liner portion (8) adapted to be comprised in one of said teatcups (2) and a conduit portion (5) adapted to extend between the respective teatcup and the claw, wherein the conduit portion (9) of each
10 teatcup liner has at least one property influencing the operation of the teatcup liner during milking, characterised in that said property of the conduit portion (9) of a first pair of the four teatcup liners (4) differs in a predetermined manner from said property of a second pair of
15 the four teatcup liners (5), and that said property includes at least one of the length of the conduit portion (9), the flexibility of the conduit portion (9) and the straightness of the conduit portion (9).
- 20 2. The set according to claim 1, characterised in that the first pair of said teatcup liners (4) is adapted to be attached to the rear teats of the animal and the second pair of said teatcup liners (5) is adapted to be attached to the forward teats of the animal.
- 25 3. The set according to any one of the preceding claims, characterised in that said property includes the length of the conduit portion (9), wherein the length of the first pair differs from the length of the second pair by a
30 predetermined distance (14).
- 35 4. The set according to claim 3, characterised in that the predetermined distance (14) corresponds to the length difference between the rear teats and the forward teats of the animal.

5. The set according to claim 4, characterised in the length of the first pair is shorter than the length of the second pair.

5 6. The set according to any one of the preceding claims, characterised in that said property includes the flexibility of the conduit portion (9), wherein the flexibility of the first pair differs from the flexibility of the second pair by a predetermined value.

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7. The set according to claim 6, characterised in that the flexibility of the first pair is higher than the flexibility of the second pair.

15 8. The set according to any one of the preceding claims, characterised in that said property includes the straightness of the conduit portion (9), wherein the straightness of the first pair differs from the straightness of the second pair by a predetermined value.

20

9. The set according to claim 8, characterised in that the straightness of the second pair is higher than the straightness of the first pair.

25 10. The set according to claim 9, characterised in that each conduit portion (9) of the first pair of teatcups liners (4) has a slightly S-like curvature in such a way that the distance between the conduit portions (9) at the upper end in the proximity of the teatcup (2) is shorter
30 than at the lower end in the proximity of the claw (1).

11. The set according to any one of the preceding claims, characterised in that each teatcup liner (4, 5) is one moulded piece.

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12. The set according to any one of the preceding claims, characterised in that the set includes a member (20) for keeping the teatcup liners (4, 5) together prior to the mounting of the liners in the milking member.

5

13. A milking member including a claw (1), four teatcups (2) and a set of a four of teatcup liners (4, 5) each teatcup liner (4, 5) having a liner portion (8) comprised in one of said teatcups (2) and a conduit portion (9) extending
10 between the respective teatcup (2) and the claw (1), wherein the conduit portion (9) of each teatcup (4, 5) has at least one property influencing the operation of the teatcup liner during milking, characterised in that said property of a first pair of the four teatcup liners (4) differs in a
15 predetermined manner from said property of a second pair of the four teatcup liners (5), and that said property includes at least one of the length of the conduit portion (9), the flexibility of the conduit portion (9) and the straightness of the conduit portion (9).

20

14. The milking member according to claim 13, characterised in that the first pair of said teatcup liners (4) is adapted to be attached to the rear teats of the animal and the second pair of said teatcup liners (5) is adapted to be
25 attached to the forward teats of the animal.

15. The milking member according to any one of claims 13 and 14, characterised in that said property includes the length of the conduit portion (9), wherein the length of the
30 first pair differs from the length of the second pair by a predetermined distance (14).

16. The milking member according to claim 15, characterised in that the predetermined distance (14) corresponds to the
35 length difference between the rear teats and the forward teats of the animal.

17. The milking member according to claim 16, characterised
in the length of the first pair is shorter than the length
of the second pair.

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18. The milking member according to any one of claims 13 to
17, characterised in that said property includes the
flexibility of the conduit portion (9), wherein the
flexibility of the first pair differs from the flexibility
of the second pair by a predetermined value.

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19. The milking member according to claim 18, characterised
in that the flexibility of the first pair is higher than the
flexibility of the second pair.

15

20. The milking member according to any one of claims 13 to
19, characterised in that said property includes the
straightness of the conduit portion (9), wherein the
straightness of the first pair differs from the straightness
of the second pair by a predetermined value.

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21. The milking member according to claim 20, characterised
in that the straightness of the second pair is higher than
the straightness of the first pair.

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22. The milking member according to claim 21, characterised
in that each conduit portion of the first pair of teatcup
liners (4) has a slightly S-like curvature in such a way
that the distance between the conduit portions (9) at the
upper end in the proximity of the teatcup (2) is shorter
than at the lower end in the proximity of the claw (1).

30

23. The milking member according to any one of claims 13 to
22, characterised in that each teatcup liner (4, 5) is one
moulded piece.

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